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ABSTRACT

A set of 10 attitudinal items from the 1985 National Assessment of Educational Progress (NAEP) was administered to 131 fifth graders who had taken the Iowa Test of Basic Skills to determine the relationship between reading achievement and attitudes. Complete, appropriate data were available for 114 students. Teachers' responses to selected NAEP attitude items were also obtained. The Kruskal-Wallis analysis of variance by ranks procedure was used to determine relations among students' opinions of their reading ability, teachers' opinions of the students' reading ability, and standardized test performance. The sign test was used to compare teachers' and students' opinions of students' reading skill levels. Results indicate that: (1) teachers' opinions were consistent with students' standardized test scores; (2) teachers labelled twice the number of students as good readers as did students themselves; and (3) the standardized test and the classroom teacher may focus on different reading skills in order to assess student performance. Nine data tables are included. (TJH)

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# The Relationship between Student Reading Achievement as Measured by Standardized Test Scores and Reading Attitudes as Measured by Students' and Teachers' Responses to Selected National Assessment of Educational Progress Attitudinal Items

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# The Relationship between Student Reading Achievement as Measured by Standardized Test Scores and Reading Attitudes as Measured by Students' and Teachers' Responses to Selected National Assessment of Educational Progress Attitudinal Items

## Introduction

We studied the relationship between student attitudes toward reading and their achievement in the subject. We also compared students' and teachers' opinions of the students' reading skill levels. Our data sources included scores from the Iowa Tests of Basic Skills and the set of ten attitudinal items used in the Third National Assessment of Educational Progress in Reading (NAEP) which was conducted in 1985.

## Review of the Literature

Thurstone was the first social scientist to work with attitudinal measurement (1927, 1928). He stated the law of comparative judgment which provided a model for collecting and analyzing these data. Since Thurstone's time, studies on attitudes have appeared in the educational literature in abundance. A number of these studies have focused on the relationship between attitudes and achievement.

The NAEP releases selections of items from time to time in order to allow educators to review them. Information on report groups and response patterns is included in the

release. Ten exercises on attitudes toward reading were released in 1985.

Some interest has been directed toward attitudes toward reading and achievement in the subject. Koenke (1978) and Brown (1979) reviewed a number of studies in the area. Since these reviews were published, a number of researchers have explored the relationship.

Navin and Bates (1986) found positive relationships between student attitudes and reading achievement on measures administered before a parental involvement program and afterwards. Students improved on both variables as a result of the program. The writers used the Dunn-Chester Reading Attitude Scale, a twenty-item instrument made up of five-point Likert responses, and an informal reading inventory to collect their data.

According to Zuelke (1986), a student's feelings about his ability to take control over school based situations and accept responsibility for his actions influenced his reading achievement. Zuelke used standardized achievement test scores and the School Attitude Measure to collect data which were relevant to the present study. The writer's sample was made up of 257 sixth grade students.

Miller, Ellsworth and Howell (1986) studied twelve schools where student reading achievement was higher than would be anticipated according to family income. The

writers found that students enrolled in these schools had positive attitudes toward reading, a characteristic also shown by the schools' principals. In addition, the schools had small student bodies, low pupil mobility and teachers who used structured strategies in their reading lessons.

There could be a positive relationship between attitude and achievement but the literature has not produced substantive information on the topic. Moreover, it is impossible to determine if one is the cause of the other or its effect or if a third variable influences both. Aiken attempted to resolve this dilemma through an experimental design known as cross-lagged panel analysis (1970).

According to Cook and Campbell (1979) this experimental design can demonstrate causal links between a pair of variables measured at two or more points in time. Although the design appears to be promising when manipulating variables is difficult or could produce low external validity (Kenny, 1975; Kenny and Harackiewicz, 1979), little research has been conducted using this strategy. Quinn and Jadav took steps designed to remedy this deficiency as they examined the relationships between attitude and achievement in mathematics and reading among elementary school children.

Cross-lagged panel analysis involves work with measures of more than one variable on more than one occasion. In its simplest form, there would be two measures on two occasions.

Statistically, the researcher looks at the correlation between the same variables at both times, both variables at the same time and variable 1 at time 2 and variable 2 at time 1. The final computation produces the cross-lagged figure. Quinn and Jadav examined the findings from three studies and concluded that no causal relationships could be identified.

Richards and Bear (1987) found that student performance on an attitude scale predicted achievement. The scale addressed reading, mathematics and science through three sets of items. Report card grades served as the performance measure and the writers took steps designed to control aptitude.

Corrigan and Conrad (1989) examined the relationship between attitudes toward reading, prior knowledge, and reading comprehension scores. The researchers used a questionnaire to collect information on prior knowledge and attitudes. The data revealed no cause and effect link but Corrigan and Conrad were able to identify a consistent pattern among the variables.

Some evidence for the link between attitudes and achievement has been revealed in the literature. We wanted to replicate this finding with the set of NAEP attitudinal items. While the NAEP has collected information on attitudes toward reading in its four Assessments, efforts designed to

show the link between participants' responses to these items and their reading performance have not been prepared. We took steps to bridge this opening.

Procedures

In practice, we administered the set of ten NAEP attitudinal items to 131 fifth grade students. These students had been given the Iowa Tests of Basic Skills and we collected their total reading percentile rank. These data were used for our first analysis. Here, we grouped the students on their responses to the first NAEP item: "What kind of reader do you think you are for your age ? (1) A poor reader, (2) a good reader, (3) a very good reader and (4) I don't know." Then, we examined their standardized test scores through this grouping.

We reviewed our data set before analyzing it and found that students' scores in each reading skill category varied considerably: Some students with relatively high standardized test scores saw themselves as poor readers and some with low scores, as good or very good readers.

Complete data were available for 120 students. Test scores were not recorded for eleven students. We did not use the data produced by six students who stated that they did not know their reading ability. Therefore, our sample was made up of 114 students. We used the Kruskal-Wallis analysis

of variance by ranks procedure (1952) in order to determine if students' opinions of their reading ability and teachers' opinions of their students' reading ability were related to their standardized test performance. We ran an SPSSX program to analyze our data (1986).

In our second analysis, we compared teachers' and students' opinions of their reading skill levels We used the sign test to analyze our data through an SPSSX program.

Results

Table 1 shows the results of our first analysis. A significant difference emerged. A subsequent series of analyses revealed that this significance occurred in two instances; between those who considered themselves poor readers and those who considered themselves good readers and between those who considered themselves good readers and those who considered themselves very good readers. There was no significance between the poor readers and very good readers. These analyses appear in Tables 2, 3 and 4.

Table 1

Students' Opinions of Their Reading Ability and Standardized Test Performance according to the Kruskal-Wallis Procedure

| Group | Number | Mean Ranks | Chi-Square | df | rho |
|---|---|---|---|---|---|
| Very Good Readers | 11 | 68.23 | | | |
| Good Readers | 53 | 43.43 | | | |
| Poor Readers | 50 | 70.05 | 18.0 | 2 | <.001*** |

Table 2

Students' Opinions of Their Reading Ability and Standardized Test Performance according to the Kruskal-Wallis Procedure: Good Readers & Very Good Readers

| Group | Number | Mean Ranks | Chi-Square | df | rho |
|---|---|---|---|---|---|
| Very Good Readers | 11 | 44.18 | | | |
| Good Readers | 53 | 30.08 | 5.24 | 1 | .02* |

Table 3

Students' Opinions of Their Reading Ability and Standardized Test Performance according to the Kruskal-Wallis Procedure: Good Readers & Poor Readers

| Group | Number | Mean Ranks | Chi-Square | df | rho |
|---|---|---|---|---|---|
| Good Readers | 53 | 40.36 | | | |
| Poor Readers | 50 | 64.34 | 16.58 | 1 | <.001*** |

Table 4

Students' Opinions of Their Reading Ability and Standardized Test Performance according to the Kruskal-Wallis Procedure: Poor Readers and Very Good Readers

| Group | Number | Mean Ranks | Chi-Square | df | rho |
|---|---|---|---|---|---|
| Very Good Readers | 11 | 30.05 | | | |
| Poor Readers | 50 | 31.21 | .04 | 1 | .84 |

Table 5 shows the results for our second major analysis, teachers' opinions of their students' reading ability and their standardized test score. Here, we found that significance emerged. Our subsequent analyses showed that significance occurred between those students identified as good readers and poor readers and those identified as very good readers and poor readers.

Table 5

Teachers' Opinions of Their Students' Reading Ability and Standardized Test Performance according to the Kruskal-Wallis Procedure

| Group | Number | Mean Ranks | Chi-Square | df | rho |
|---|---|---|---|---|---|
| Very Good Readers | 22 | 44.14 | | | |
| Good Readers | 56 | 50.50 | | | |
| Poor Readers | 42 | 82.40 | 26.20 | 2 | <.001*** |

Table 6

Teachers' Opinions of Their Students' Reading Ability and Standardized Test Performance according to the Kruskal-Wallis Procedure: Very Good Readers & Good Readers

| Group | Number | Mean Ranks | Chi-Square | df | rho |
|---|---|---|---|---|---|
| Very Good Readers | 22 | 44.14 | | | |
| Good Readers | 56 | 41.53 | 1.59 | 1 | .21 |

Table 7

Teachers' Opinions of Their Students' Reading Ability and Standardized Test Performance according to the Kruskal-Wallis Procedure: Good Readers & Poor Readers

| Group | Number | Mean Ranks | Chi-Square | df | rho |
|---|---|---|---|---|---|
| Good Readers | 56 | 37.47 | | | |
| Poor Readers | 42 | 65.54 | 23.43 | 1 | <.001*** |

Table 8

Teachers' Opinions of Their Students' Reading Ability and Standardized Test Performance according to the Kruskal-Wallis Procedure: Very Good Readers & Poor Readers

| Group | Number | Mean Ranks | Chi-Square | df | rho |
|---|---|---|---|---|---|
| Very Good Readers | 22 | 21.30 | | | |
| Poor Readers | 42 | 38.37 | 12.17 | 1 | <.001*** |

Our next analysis was designed to determine the relationship between students' opinions of their reading ability and those of their teachers. We used the sign test and our findings are shown in Table 9.

Table 9

Students' Opinions of their Reading Ability and Teachers' Opinions of their Students' Reading Ability according to the Sign Test

| Same Opinion | More Positive Opinion by Students | Teachers | Z | rho |
|---|---|---|---|---|
| 79 | 33 | 8 | 3.75 | <.001*** |

In our final analysis, we studied the relationship between percentile rank and opinion for the seventy-nine students whose opinion matched their teachers'. We used Spearman's rho and found that the correlation was .36.

Discussion

We used standarized test scores in reading in order to examine students' and teachers' opinions of the students reading performance. This examination was made through the students' and teacher' responses to the NAEP question "What kind of reader do you think you are for your age ? (1) A poo reader, (2) a good reader, (3) a very good reader and (4) I don't know."

We found that the teachers' opinions were consistent with the students' standardized test scores. The students who were identified by their teachers as very good readers tended to have the higher standardized test scores while those identified as poor readers earned the lower scores. Students, however, showed more variability in this exercise.

The teachers labeled twice the number of students as good readers as did the students themselves - twenty-two and eleven. Fifty-two students said that they were poor readers while their teachers placed forty-two in this category. Therefore, it appears as if students tend to underrate themselves in terms of their reading skills.

In addition, the standardized test and the classroom teacher may look for different reading skills in order to assess student performance. Our rank order correlation between opinion - when student and teacher held the same - and percentile rank was .36. While significant, this figure shows only a limited relationship between the two variables.

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